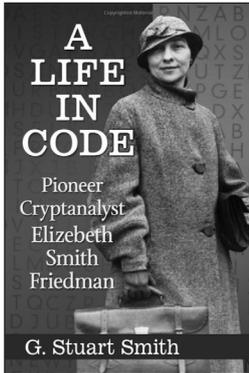


Book Review



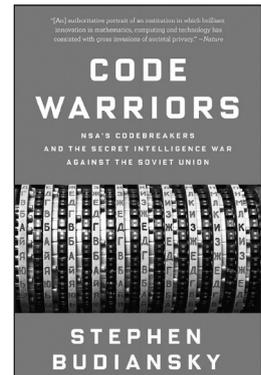
**A Life in Code:
Pioneer Cryptanalyst Elizebeth Smith Friedman**
G. Stuart Smith

McFarland Publishing, 2017, 240 pp..

**Code Warriors: NSA's Codebreakers and
the Secret Intelligence War Against the Soviet Union**

Stephen Budiansky

Vintage Books, 2017, 432 pp.



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After more than a decade grappling with non-state actors, U.S. intelligence officers turned to consider how to support the military in major combat operations against a peer threat, something the U.S. had not experienced in over 20 years. The time was 1941, and the world of U.S. cryptanalysis¹ was about to undergo some dramatic changes. As General David Perkins recently described it, “in 1940, the U.S. Army began to learn the hard way to become a modern military force. We face indications of similar challenges today.”² The fledgling intelligence community shared that history with the military, and today faces its own comparable challenges.

Two recent books cover that shared experience as it unfolded in the world of intelligence, each by exploring the early history of cryptanalysis and signals intelligence (SIGINT). A biography, *A Life in Code: Pioneer Cryptanalyst Elizebeth Smith Friedman* by G. Stuart Smith, chronicles the career of one of the intelligence community’s early trailblazers.³ Honing her skills in the 1920s and 30s against rum-runners and organized crime, Elizebeth played a significant role refocusing the U.S. intelligence effort toward the Axis powers. For example, in 1941 the U.S. Navy absorbed the Coast

Guard cryptanalysis unit that Elizebeth helped stand up and develop during the pre-war years.⁴ What challenges did she face adjusting to a new strategic environment and a changing military culture? What obstacles did she overcome adapting her civilian law enforcement cryptanalysis skills into an expanding military? Smith gives us a highly readable account of one woman's experience during this time of transition.

Of interest to readers from the military and the intelligence community will be the rocky start to interagency cooperation that emerged as various civil and military organizations worked out how to share SIGINT and cooperate to exploit it during the early years of WWII. Smith stresses Elizebeth's role bridging law enforcement and defense, and her recognition of the importance of breaking down organizational barriers by having analysts work closely with collectors and operators. Smith describes wasteful turf battles that distracted from the mission, and cumbersome bureaucratic processes that undermined the effectiveness of intelligence, driving home lessons in interagency cooperation that arguably had to be relearned again decades later.⁵

Partially obscured these days in the shadow of her husband—the “Dean of American Cryptology” William Friedman⁶—Elizebeth had a storied career of her own that was much more publicized in its time.⁷ For her work bridging an array of various agencies, Elizebeth has been called the “Mother of the Fusion Center.”⁸ Smith also highlights the bias against women prevalent during Elizebeth's career.⁹ Bias that inspired the public's curiosity about her, but ironically also kept her in the background, paid her less than her male colleagues, and sometimes hindered the dissemination of her work.¹⁰

In *The Code Warrior: NSA's Codebreakers and the Secret Intelligence War Against the Soviet Union*, Stephen Budiansky approaches a similar subject from a broader perspective, examining the long history of U.S. SIGINT collection on our Soviet adversary. Picking up the story of cryptanalysis and SIGINT as it developed during and after WWII, Budiansky's history describes how the early intelligence community responded to a changing strategic environment characterized by the “global nature of communications, and thus of intelligence opportunities ripe to be exploited.”¹¹ He addresses the challenge of reviving atrophied wartime intelligence skills in Vietnam, where the National Security Agency (NSA) had to relearn “forgotten lessons about signals intelligence in a real war.”¹² Budiansky also notes that “all of the old fights over control of signals intelligence in the field resurfaced. The hard-won lessons from previous wars of the importance of centralization seemed to have been utterly forgotten; it was as if Korea or World War II had never happened.”¹³

Both authors highlight how the increasing complexity of technology gradually overwhelmed the art of the original cryptanalysts, leading to massive databases beyond the ability of a human being to calculate, and to the cryptanalyst's ever-growing reliance on computers for breaking codes. While both authors describe the technology race that drove this trend, Smith—openly acknowledging his lack of background on the technical facets of cryptanalysis—puts a more human face on his account as he traces Elizebeth's path for us. Budiansky on the other hand cannot entirely resist the temptation to overload the reader by fixating on the technology, and too many details on cryptology and its associated equipment sometimes obscure his main message. Mercifully, Budiansky has weeded out many technical aspects that are of interest but not germane to the story by compiling them in a series of five useful appendices.

Another common theme is transparency. Americans value transparency, especially by our government. We also expect our government to keep us safe and protect our national security. This creates a dilemma when we realize that some information can't be revealed if our security is to be

preserved. Budiansky describes how the “Russia Problem”—particularly the efforts to break the Soviet codes—aggravated this dilemma. The twin legacies of the dogged pursuit to stay ahead of Soviet security practices, Budiansky argues, are that NSA’s requirements were a consistent spur to technological development as well as a weight balanced in the scales between transparency and security.

Budiansky opens his book on a controversial note. It initially seems questionable that the introduction to a history of the NSA from its WWII roots to the fall of the Berlin Wall should center on Edward Snowden. Given the roles played by SIGINT and cryptanalysis in so many important events encompassed by those decades, why would anyone provide Snowden’s “reckless exposure” of national secrets such prominence? Surely there must be other more illustrative moments to highlight from NSA’s history? Indeed there are, for that name is never mentioned again beyond the author’s introductory note. As Budiansky’s history unfolds, a shadow of suspicion lingers that Snowden was thrown in to serve as a hook to the current reader, for it is clear that the story of NSA’s origins and its Cold War legacies is a story that needs no such introduction.

However, this reminder about a recent leaker of classified information does arguably have some merit. It at least supports the idea that studying the roots of the intelligence community might be helpful in analyzing our current counter-intelligence challenges, particularly the insider threat. He links Snowden to a troubling past of similar incidents, attributing their transgressions in part to an organizational culture of excessive secrecy. Budiansky discusses other analysts who, decades before Snowden, also fled to Moscow after betraying U.S. secrets, and eventually came to deeply regret their decision when they discovered that life in the Soviet Union was not so pleasant after all.¹⁴

One of Budiansky’s themes is that the characteristics NSA exhibits today stem from its earliest history and include both its impressive technical skills and its “impulse to push to the very limits claims of legal authority.”¹⁵ The author argues that NSA’s eagerness to press these limits contributed to an erosion of public trust in the U.S. government. For example, Budiansky criticizes NSA sharply for “habits of mind and institutional culture that drove the agency to engage in such a breathtakingly comprehensive technological intrusion into private communications.”¹⁶

Budiansky acknowledges that the WWII SIGINT community was just one actor among many that felt compelled to pursue what was described as “justifiable wartime measures.”¹⁷ Budiansky argues that the Cold War merely continued this descent down a slippery slope and “even signals intelligence could not escape the moral black hole that secrecy drew everything into.”¹⁸ If there is one glaring blind spot to the story as Budiansky tells it, it is his propensity to lean toward a conspiracy-theory point of view. Not everything that goes wrong derives from nefarious intent or represents deliberate manipulation. Sometimes, like the amateurish blunders Budiansky describes during some intelligence operations in WWII, things go off the rails simply because of poor analysis, bad luck, or human error.¹⁹ People make honest mistakes despite the best of intentions. There is no need to look for a conspiracy behind every mishap or wrong turn.

Smith also notes the need for official secrecy, but doesn’t address whether it affects public trust in government. That is probably because his book focuses on the life of a single individual, and the time in which she worked was one when Americans arguably had a higher degree of confidence that their government knew what was best for them. For Elizebeth, the need for secrecy surrounding her profession was never in doubt. As Elizebeth became more prominent because of her connection to some famous criminal prosecutions, reporters flocked to tell her story. People were especially interested in her because she was a woman whose expertise had lifted her to a leading role in the

emerging field of intelligence. The publicity troubled Elizebeth, however, and Smith describes her growing concern that widespread knowledge of her methods and the potential exposure of sensitive information weakened her effectiveness.²⁰

Budiansky rounds out his history with insights into how NSA grappled with some of the more routine tasks faced by any growing organization, such as the never-ending need to find and promote good managers.²¹ Other challenges are more unique to the intelligence world, such as maintaining objectivity and avoiding the politicization of intelligence.²² His description of the challenges and trials of the SIGINT community and NSA as it expanded its role and workforce ring true. It is Budiansky's recognition of these familiar elements that gives his history an added touch of authenticity, especially for anyone who has ever served in a bureaucracy.

Budiansky is not entirely negative and does balance his account to give NSA and the SIGINT community credit for many positive accomplishments. He especially highlights the impetus SIGINT and cryptanalysis provided to the development of the U.S. computer industry.²³ Budiansky highlights another positive NSA trait that is not necessarily apparent to the average American: NSA employees are ordinary citizens with typical lives just like any other American.²⁴ His accounts of the social life at NSA are an interesting perspective on its history, adding a bit of humanity to his tale of technology and bureaucracy. Finally, for anyone involved in providing distance education, it will no doubt be encouraging to learn that graduates of the Army's correspondence course in cryptology contributed significantly to codebreaking triumphs.²⁵

Smith and Budiansky's stories mesh well, and together their two books provide a complementary description of the early days of the intelligence community. As Smith and Budiansky's histories progress, they both touch upon the same systemic problems that bedeviled the intelligence community as it expanded to embrace a new strategic operating environment. It's instructive to reflect on how institutional biases, interagency rivalries, and cumbersome bureaucratic procedures emerge time and again to frustrate the effectiveness of intelligence operations.²⁶ Budiansky and Smith have done us a service by illuminating the roots of some of today's complex intelligence and interagency issues. **IAJ**

NOTES

1 David Kahn defines cryptanalysis as "the methods of breaking codes and ciphers." David Kahn. *The Codebreakers: the Science of Secret Writing* (New York: Scribner, 1996), xvii.

2 David G. Perkins, "Multi-Domain Battle: The Advent of Twenty-First Century Warfare," *Military Review* 97, no. 6 (November-December 2017): 10.

3 Her mother intentionally spelled her first name with an 'e' after the 'z' so that she would not be called 'Eliza.' G. Stuart Smith, *A Life in Code: Pioneer Cryptanalyst Elizebeth Smith Friedman* (North Carolina: McFarland Publishing, 2017), 15.

4 *Ibid.*, 11, 119.

5 *Ibid.*, 128.

6 David Kahn calls William Friedman "the world's greatest cryptologist." He pioneered the field during WWI, authored leading textbooks on cryptanalysis during the interwar years, and led the team that broke the Japanese diplomatic cipher PURPLE just prior to WWII. Kahn, *The Codebreakers*, 21-23.

7 Righting an historical wrong, interest in Elizebeth Friedman's career seems to have increased. For

further reading see another recent biography of Elizebeth: Jason Fagone, *The Woman Who Smashed Codes: A True Story of Love, Spies, and the Unlikely Heroine Who Outwitted America's Enemies* (New York: Harper Collins, 2017).

8 Smith, *A Life in Code*, 6.

9 Ibid., 6.

10 Smith, *A Life in Code*, 36, 83, 123, 126, 176.

11 Stephen Budiansky, *Code Warriors: NSA's Codebreakers and the Secret Intelligence War Against the Soviet Union* (New York: Vintage Books, 2017), 15.

12 Ibid., 262.

13 Ibid., 261.

14 Ibid., 220-221.

15 Ibid., xix.

16 Ibid., xviii.

17 Ibid., 35.

18 Ibid., 79.

19 Ibid., 6, 35.

20 Smith, *A Life in Code*, 105, 108.

21 Budiansky, *Code Warriors*, 176.

22 Ibid., 253.

23 Ibid., 208.

24 Ibid., 158.

25 Ibid., 48.

26 For example, in February 2016, the Central Intelligence Agency released its *Diversity and Inclusion Strategy for 2016-2019*, showing that although progress has been made in the intelligence world since Elizebeth's time, promoting a diverse and inclusive culture remains an important concern. The report notes that the "critical national security mission necessitates that we embrace all perspectives, honor all differences, and ensure all officers have the opportunities and tools to contribute to their full potential." "CIA [Central Intelligence Agency] Releases Diversity and Inclusion Strategy for 2016-2019," CIA website, 9 February 2016, accessed 15 December 2017, <https://www.cia.gov/news-information/press-releases-statements/2016-press-releases-statements/cia-releases-diversity-and-inclusion-strategy-for-2016-2019.html>.